

REMARKS

Claims 1-28 are pending in the application. By this Amendment, claims 1, 2, and 28 are amended. Claim 28 is amended to correct a typographical error. Support for the claims can be found throughout the specification, including the original claims, and the drawings. Reconsideration in view of the above amendments and following remarks is respectfully requested.

The Office Action rejected claims 1-5, 8-9, 13, 15-20, 23-26, and 28 under 35 U.S.C. §102(e) as being anticipated by Irish, U.S. Patent No. 6,757,281. The rejection is respectfully traversed.

Irish relates to an address resolution protocol (ARP) packet operating method for an IP network or a VLAN. Further, Irish relates to cases where the MAC address of a destination host is known and an ARP operation method for such cases. However, Irish does not disclose or suggest a communication method using a MAC address in one IP subnet including a plurality of VLANs. Therefore, Irish is similar to the related art disclosed in the present application.

In contrast to Irish, embodiments of the present invention relate to a method for obtaining a MAC address of a destination host positioned in a VLAN different from a VLAN of a source host among a plurality of VLANs included in one Internet Protocol (IP) subnet. In certain embodiments, a switching router is positioned between the plurality of VLANs and actively performs a MAC switching and an IP routing when a source host and a destination host that belong to different VLANs communicate an IP packet. In order to communicate the IP

packet between the source host and the destination host, the source host and the switching router first communicate the IP packet, and then the switching router and the destination host communicate the IP packet. That is, when a first ARP request packet is transmitted from the source host, the switching router generates a second ARP request packet, by recording a MAC address of a corresponding port to a source address (SA) field. Then, the switching router broadcasts the second ARP request packet to the VLAN to which the destination host belongs. When a first ARP response packet is transmitted from the destination host, the switching router stores a MAC address of the destination host included in the first ARP response packet in a routing table. The switching router records a MAC address of the source host in a destination address (DA) field and records the MAC address of its corresponding port to a source address (SA) field, thereby generating a second ARP response packet and transmitting the second ARP response packet to the source host. Further, even when the switching router knows the MAC address of the destination host, the source host transmits the IP packet to the switching router by using the port MAC address of the switching router as the destination MAC address (DA field value), and the switching router transmits the IP packet to the destination host by using the MAC address of the destination host as the destination MAC address (DA field value) and by using its port MAC address as the source MAC address (SA field value).

Independent claim 1 recites a communication method among a plurality of virtual local area networks (VLANs), each VLAN having a number of hosts, where the plurality of VLANs

belong to the same Internet Protocol (IP) subnet. Independent claim 13 recites a broadcast domain determining method for communications among a plurality of virtual local area network (VLANs) in the same Internet protocol (IP) subnet. Independent claim 19 recites a communication method among a plurality of networks in a subnet. Independent claim 28 recites an improved communication system having a plurality of networks interconnected within a subnet by a switching router, wherein each network has a number of hosts. Irish fails to disclose or suggest such respective methods of independent claims 1, 13, 19, and 28, or the claimed combination of steps of the respective methods of independent claims 1, 13, 19, and 28. As set forth above, Irish does not disclose or suggest a communication method for a plurality of VLANs or networks belong to the same (Internet protocol) subnet. Rather, Irish discloses a communication method for an IP network or VLAN.

Accordingly, Irish fails to disclose or suggest the respective claimed inventions of independent claims 1, 13, 15, 19, and 28. Dependent claims 2-5, 8-9, 16-18, 20, and 23-26 are allowable over Irish for at least the reasons discussed above with respect to independent claims 1, 15, and 19, from which they respectively depend, as well as for their added features.

The Office Action rejected claims 6-7, 10-12, 14, 21-22, and 27 under 35 U.S.C. §103(a) as being unpatentable over Irish in view of Rodrig et al. (hereinafter "Rodrig"), U.S. Patent No. 6,256,314. The rejection is respectfully traversed.

Dependent claims 6-7, 10-12, 14, 21-22, and 27 are allowable over Irish for the reasons set forth above with respect to independent claims 1, 13, and 19, from which they respectively

Serial No. 09/939,558
Reply to Office Action dated April 8, 2005

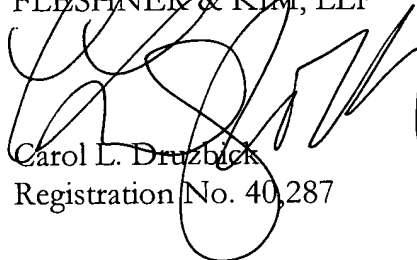
Docket No. P-0240

depend, as well as for their added features. Rodrig fails to overcome the deficiencies of Irish, as it is merely cited for allegedly teaching specific packet address content. Accordingly, the rejection of claims 6-7, 10-12, 14, 21-22, and 27 over Irish and Rodrig should be withdrawn.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Carol L. Druzbeck, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



Carol L. Druzbeck
Registration No. 40,287

P.O. Box 221200
Chantilly, Virginia 20153-1200
(703) 766-3701 CLD/kah:lew
Date: August 3, 2005

Please direct all correspondence to Customer Number 34610